## **Notice Inviting Quotation (E-Procurement mode)**

## INDIAN INSTITUTE OF TECHNOLOGY DELHI HAUZ KHAS, NEW DELHI-110016

Dated: 22/09/2016

## Open Tender Notice No. IITD/CIVIL(SP-563)/2016

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Details of the item	Servo-hydraulic Actuator with Controller for Structural Testing Facility
Earnest Money Deposit to be submitted	Rs. NIL
Warranty	3 Years
Performance security	5% of FOB value (to be decided by the faculty concerned)

Tender Documents may be downloaded from Central Public Procurement Portal <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission '.

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a> as per the schedule given in the next page.

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).

## **Schedule**

Name of Organization	Indian Institute of Technology Delhi
Tender Type (Open/Limited/EOI/Auction/Single)	Open
Tender Category (Services/Goods/works)	Goods
Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell)	Supply
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	Hydraulic system
Source of Fund (Institute/Project)	Budget Code IITD/IRD/RP03208
Is Multi Currency Allowed	YES
Date of Issue/Publishing	22/09/2016 (13:00 Hrs)
Document Download/Sale Start Date	22/09/2016 (13:00 Hrs)
Document Download/Sale End Date	21/10/2016 (16:00 Hrs)
Date for Pre-Bid Conference	
Venue of Pre-Bid Conference	
Last Date and Time for Uploading of Bids	21/10/2016 (16:00 Hrs)
Date and Time of Opening of Technical Bids	25/10/2016 (15:00 Hrs)
Tender Fee  EMD	Rs. NIL/-(For Tender Fee) Rs. NIL/-(For EMD) (To be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C : IITD Revenue Account SBI A/C No. : 10773572622 Name of the Bank : State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016 IFSC Code : SBIN0001077 MICR Code : 110002156 Swift No. : SBININBB547 (This is mandatory that UTR Number is provided in the online quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II)
No. of Covers (1/2/3/4)	02
Bid Validity days (180/120/90/60/30)	90 days (From last date of opening of tender)
Address for Communication	Dr. D. R. Sahoo, Dept of Civil Engineering, IIT Delhi
Contact No.	+91 11 2659 1203
Fax No.	+91 11 2658 1117
Email Address	drsahoo@civil.iitd.ac.in

Chairman Purchase Committee (Buyer Member)

## **Instructions for Online Bid Submission:**

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (<u>URL:http://eprocure.gov.in/eprocure/app)</u>. The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:

http://eprocure.gov.in/eprocure/app

#### REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC / eToken.

#### **SEARCHING FOR TENDER DOCUMENTS**

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

#### PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the

bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

## **SUBMISSION OF BIDS**

- 1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees are sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page No.2).
- 4) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

OR

In some cases Financial Bids can be submitted in PDF format as well (in lieu of BOQ).

- 5) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 6) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- 7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 9) Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

## ASSISTANCE TO BIDDERS

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

## **General Instructions to the Bidders**

- 1) The tenders will be received online through portal <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>. In the Technical Bids, the bidders are required to upload all the documents in .pdf format.
- 2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link "Information about DSC".
- 3) Tenderer are advised to follow the instructions provided in the 'Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.

## **Department of Civil Engineering**

## Indian Institute of Technology Hauz Khas, New Delhi-110 016

## **NOTICE INVITING QUOTATIONS**

Dated: 22/09/2016

Subject: Servo-hydraulic Actuator with Controller for Structural Testing Facility

#### **Invitation for Tender Offers**

Indian Institute of Technology Delhi invites online Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for **supply, installation & integration of Servo-hydraulic Actuator with Controller for Structural Testing Facility** with (warranty period as stated at page #2 of this tender) on site comprehensive warranty from the date of receipt of the material as per terms & conditions specified in the tender document, which is available on CPP Portal <a href="http://eprocure.gov.in/eprocure/app.">http://eprocure.gov.in/eprocure/app.</a>

#### TECHNICAL SPECIFICATION:

Sl. No.	Technical Specifications	
01	(A) MANDATORY ITEMS:	
	1) Servo-controlled Hydraulic Actuator (01 No.)	
	<ul> <li>✓ Single-ended, double-acting, fatigue-rated for combined balanced dynamic performance</li> <li>✓ Rated load capacity: Min. 900 kN (Tension); 1300 kN Compression); Rated stroke: ±250 mm</li> <li>✓ Full-stroke, coaxially-mounted Temposonic displacement transducer</li> <li>✓ High-capacity, non-metallic bearings bonded directly to the end caps</li> <li>✓ Piston rods machined from a single piece of heat-treated alloy steel and surface coated</li> <li>✓ Cushions to protect the actuator from the effects of high-speed and high-mass forces</li> <li>✓ Polymer bearing for the endcaps.</li> <li>✓ Manifold should have provision to accommodate dual Servo-valves with /without port shut-offs</li> <li>✓ One servo-valve of 63 lpm (minimum) capacity</li> <li>✓ One Axial Load Cell: ±1000kN capacity with an overload capacity of 150% of the rated load; Non-linearity: 0.15% of full scale or better; Hysteresis: 0.2% of full scale or better</li> <li>✓ One Swivel Head and One Swivel Base: Adjustable bearing for clearance to eliminate backlash; Dynamic force rating: ±1,000 kN or more; Tilt angle: ±8° or more; Swivel angle: +90°/-30° or more; For use in cyclic, reversing load application</li> </ul>	
	<ul> <li>✓ Accuracy: ±1% above the threshold value of 10% of full-scale of sensors</li> <li>✓ Both displacement transducer and Load Cell should be factory calibrated to full range</li> <li>✓ Must be compatible with the existing MTS TestStar-IIm controller.</li> </ul>	
	2) Hydraulic Power Unit (01 No.)	
	<ul> <li>✓ Variable-volume pump, Rated flow capacity: 100 lpm or higher</li> <li>✓ HPU should be up-gradable to 300 lpm in future on-site without change in HPU main chassis.</li> <li>✓ No multiple HPU commoning.</li> <li>✓ Foot print must be less than 3 m x 1.5m.</li> </ul>	

- ✓ 210 bar pressure, and 415 V AC, 50 Hz, 3-phase power
- ✓ Direct-coupled 60 HP submerged motor providing minimum 90% operating efficiency.
- ✓ Nominal noise rating of 68dB(A) or less measured at 3 feet with the pump operating at high pressure.
- Corrosion-resistant stainless steel oil-to-water heat exchanger to dissipate generated heat
- ✓ Temperature controlled water-saver and water shut-off valves to minimize water consumption.
- ✓ Cabinet with lockable cover to reduce noise and to prevent tampering of controls.
- ✓ Full flow 3-micron absolute filter in the return line to provide excellent oil cleaning.
- ✓ Integrated reservoir, pump/motor, heat exchanger
- ✓ Approved electrical disconnect interrupts power to the unit when the door is opened.
- ✓ Interlock circuitry for over-temperature and low-fluid level protection.
- ✓ Switches for start, low/high pressure, and stop on the front panel of the enclosure.
- ✓ High quality face seal fittings minimize the potential for leakage outside of the reservoir.
- ✓ Indicators for power on, low oil level, over temperature, and dirty filter warnings
- ✓ Hose pipes for actuator: Pressure, Return and Drain piped of 15 m long each

#### 3) Digital Controller (01 No.)

- ✓ Digital servo control, function generation, data acquisition, hydraulic control, and digital I/O capability.
- ✓ Expandable to 8 nos. of Control channels and to 4 nos. of Test Stations.
- ✓ Direct Digital Control (DDC) bandwidth update rate: 6 kHz or faster
- ✓ Signal conditioner data sample rate: 100 kHz or faster.
- ✓ Function generation by 32 bit processor, standard haversine, square, and ramp waveforms and downloaded wave shapes.
- ✓ Computer controlled transducer limits.
- ✓ Automated dynamic control mode switching between any connected transducer. Any connected transducer or calculation can be selected for control (typically load, strain or displacement) including load limited displacement during specimen loading.
- √ Three computer-selectable channels of 16 bit resolution analog output for easy access to transducer signals and other critical parameters.
- ✓ Ability to save and restore PID tuning settings
- ✓ Adaptive controls compensation: Peak-Valley and Null Pacing
- ✓ Connected with high-speed serial interface with personal computer, No parallel interface is acceptable.
- ✓ Programmable libraries for real time control of system
- ✓ Should be available for use with C++, Visual basic, and Lab View.
- ✓ Online UPS should be included and should communicate with the controller.
- ✓ Cables for hydraulic control, servovalves, conditioners, and communications to personal computer.
- ✓ System cables of 15 meter length and 15 meter long HPU cable
- ✓ One A/D CARD: 8 channel analogue input per controller for data acquisition & feedback control
- ✓ One D/A CARD: 8 channel analogue output per controller

#### 3.1 Digital Universal Conditioner/Valve Driver Card

- ✓ The conditioner shall support transducers.
- ✓ Portability of transducer calibration data between conditioners
- Conditioners interface to DC or AC transducers and eliminate the need for separate conditioner types.
- ✓ Low-noise, low-drift, high- accuracy signal conditioning, and shunt calibration
- ✓ On-board strain gauge bridge completion.

- ✓ Excitation sensing and loss detection
- ✓ Processor-controlled limit detection
- ✓ Variable excitation frequencies for a wide variety of transducer types.
- ✓ Cards configurable to drive a two-stage valve and condition a transducer, or to drive a three-stage valve.

#### 3.2 System Operating Software

- ✓ A software interface for configuring the controller and the user interface to the test station.
- ✓ A two channel on line data display (X vs. Y or Time vs. YY), digital displays, and a system exerciser for setting up tuning parameters and warming up the system prior to testing.
- ✓ Easy program for simple monotonic and cycle test execution including data acquisition.
- ✓ Test data may be stored in choice of ASCII, Lotus, or Excel formats for analysis with your favorite tools.
- ✓ Null pacing adaptive control algorithm for use with ramp command signals
- √ Adaptive phase and amplitude algorithm for use with (constant/block) sine wave command signals
- ✓ Perform amplitude control to ensure desired amplitudes are achieved.
- ✓ Data acquisition (timed, P/V, Level Crossing, Cyclic/Logarithmic)
- ✓ Function generation up to 600 Hz on all channels; Sine, square, triangle, ramp, hold, processes, and ability to play digitized profiles
- ✓ Soft start/stop available on all channels
- Amplitude Phase Control S/W to adjust the amplitude and phase of the command to realize the desired feedback signal.
- ✓ Access to test status information from any web-enabled, internet-connected device
- ✓ System Views Provide information about a single test system or multiple test system.
- ✓ Lab Views Provide information about all the test status of your lab from anywhere at any time
- ✓ Security Data transfers use SSL/TLS 256-bit encryption
- ✓ User Access Control Provides ability to create individual passwords for a page, or limit access to users

#### (4) General Application software

- ✓ Shall include the ability to control or to capture data from any installed AC or DC transducer, or externally conditioned transducer.
- ✓ Shall allow detection of digital inputs to the test system controller and allow digital output signals to be used as output from one of the control system digital output channels.
- ✓ Shall have a detector watching for changes in peak / valley readings. The process can be used to trigger data collection or other definable test system processes.
- ✓ Shall allow the operator to selectively acquire data periodically as defined by logarithms, linear intervals or user selected intervals. This data shall be collected in time, level crossing or peak and valley samples.
- ✓ Shall allow a virtually unlimited number of test procedures to be set up and stored.
- ✓ Must be suitable for high rate testing.

## 4.1 Static Deflection Testing Software:

- ✓ Loads or deflections to be applied to the specimen in a ramp and hold manner.
- ✓ During the test, the operator should be able to determine the next incremental step and changes the test parameters accordingly until the test failure criteria is satisfied.
- ✓ Includes a run-time control editing template with the ability to stop and re-start the test at any time or to change the control mode of the actuator from load to displacement as required.

- ✓ While the incremental ramps are applied, ultimate target values are monitored to put the test into hold should they be reached.
- ✓ To allow static data acquisition of third party devices such as data loggers, a programmable trigger available during each holds cycle for data collection. Additionally, a trigger pulse can be executed at any time to initiate a single scan data collection on those same devices.
- ✓ Should allow display of up to 8 nos. of real-time plots simultaneously.

#### 4.2 Pseudo-dynamic Testing Software:

- ✓ A data input menu for entering the initial data to run the test.
- ✓ The ability to enter specimen properties for the stiffness, damping and the mass matrices.
- ✓ Up to 8 actuators should be able to be controlled with the digital controller
- ✓ Up to 8 real time plots must be available to display the trends of the test as they occur.
- ✓ A test re-start option must be included to allow test re-starts from an interrupted or terminated test
  condition.
- ✓ The program must utilize the alpha-method of Hilber, Hughes and Taylor for time integration with the improved algorithm of Shing, Vannan and Carter to reduce error propagation effects. A variable time stepping strategy should be included to assure convergence of structures displaying strain-softening behavior.
- ✓ Tests must run in displacement control and the program must allow for either independent function generation of the command signal or the ability to input real earthquake discretized ground acceleration files if desired.
- ✓ The source code must be included to allow program changes or modifications should they be desired.

#### 4.3 Seismic Profile Generation Software:

- ✓ The software package shall have a capability of generating waveforms from acceleration records including the ability to generate sine sweep, random and earthquake record playback.
- ✓ This software shall perform the integration from the acceleration to determine the displacement profile. It shall be able to test setup for seismic waveform playback using structural actuators.
- ✓ The Waveform Generation software should provide two main capabilities. The first is the ability to generate data points based on user inputs and the second is to condition user supplied earthquake acceleration data files.
- ✓ Data points should be generated using a designated time step and number of channels. With user specified parameters, a sine sweep, cyclic waveform or random waveform should be generated.
- ✓ Earthquake Acceleration File Conditioning

## (B) OPTIONAL ITEMS:

#### (1) Hydraulic Service Manifold (One Station):

- ✓ Maximum operating pressure: 21 MPa (3000 PSI)
- ✓ Fast emergency unload for system depressurization.
- ✓ Pressure shall be provided to prevent specimen damage caused by abnormal hydraulic on/off and inspection start/stop.
- ✓ Flow rating: 189 LPM (50 GPM) or more.
- √ 0.94 liter (0.25 Gallon) pressure and 0.45 liter (0.12 Gallon) return line accumulator or more, Filter: 10 micron

## (2) Quasi-Static Hybrid Simulation Software

- ✓ Computer Simulation Interface & Configuration Package
  - Quasi-static solution features a simple interface from Servocontroller to OpenFresco, wh

ich connects to widely accepted modeling software platforms, such as OpenSees, that si mulate the performance of civil engineering structures. The software shall allows for eas y exchange of command/feedback data and utilizes a GUI configurator to set-up control channels, feedback signals and engineering unit conversions.

- Berkeley Hybrid Simulation Suite-included
- OpenFresco Hybrid Simulation Software
- OpenSees Computer Simulation Software
- ✓ Quasi-static Hybrid Simulation On-site Consultation/Training
- Vendor shall provide four days, onsite consultation in the safe quasi-static operation of h ybrid simulation software including the Computer Simulation Interface/Configuration, O penSees and OpenFresco. An example of a complete hybrid simulation shall be used to s how the functionality and operation of all components of the system.
- Vendor shall provide more than two customer sites in India and ten customer sites in W orldwide who use the quasi-static hybrid simulation test pacakge.

## (C) REMARKS

- ✓ Supplier's engineer shall provide installation support and check-out service.
- ✓ On-line system manuals on the CD.
- ✓ The bidder must note that requirements in the above specifications are intended to be descriptive
  only and not restrictive. The bids offered under other specifications will be considered, provided that
  the bid clearly states the offered commodities are substantially superior to those requirements in the
  above specification. (by descriptive literature, illustrations, etc.)
- Demonstration of same or similar system in civil/structural laboratory in India during the course of technical evaluation.
- ✓ User List preferably in civil/structural laboratory with contact person name, e-mail ids and direct contact number, user certificate for satisfactory installation and workmanship along with signature and stamp to be provided as testimonials, the institute reserves the right to call each individual person for reference.
- ✓ PO's of same/similar items should be provided along-with the technical bids
- ✓ Bidder should have a sound bank balance, annual report for the last five years to be provided.
- ✓ The supplier must be ISO 9000 series certificated.
- ✓ The controller should be compatible for advanced simulation software like Pseudo-dynamic and quasi-static hybrid simulation software; proper demonstration should be provided to IIT Delhi officials for the working of the same in the present lab using existing actuators.
- ✓ Service Support: The Vendor shall define the service support plan in India and shall utilize either factory direct service or through factory trained service personnel located in India with a minimum of five service engineers on staff for servo-hydraulic application. A commitment to the local community shall be evidenced by the existence of this service support for at least 10 years.

A complete set of tender documents\* may be Download by prospective bidder free of cost from the website <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>. Bidder has to make payment of requisite fees (i.e. Tender fees (if any) and EMD) online through RTGS/NEFT only.

## **Terms & Conditions Details**

Sl. No.	Specification
1.	<b>Due date</b> : The tender has to be submitted on-line before the due date. The offers received after the
·	due date and time will not be considered. No manual bids will be considered.
2.	<b>Preparation of Bids</b> : The offer/bid should be submitted in two bid systems (i.e.) Technical bid
	and financial bid. The technical bid should consist of all technical details along with commercial
	terms and conditions. Financial bid should indicate item wise price for the items mentioned in the
	technical bid in the given format Financial Bids to be submitted in PDF format.
	The Technical bid and the financial bid should be submitted Online.
3.	EMD (if applicable): The tenderer should submit an EMD amount through RTGS/NEFT. The
	Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted.
	The EMD will be refunded without any interest to the unsuccessful bidders after the award of
	contract. Refer to Schedule (at page 2 of this document) for its actual place of submission.
4.	<b>Refund of EMD</b> : The EMD will be returned to unsuccessful Tenderer only after the Tenders are
	finalized. In case of successful Tenderer, it will be retained till the successful and complete
	installation of the equipment.
5.	<b>Opening of the tender</b> : The online bid will be opened by a committee duly constituted for this
	purpose. Online bids (complete in all respect) received along with EMD (if any) will be opened as
	mentioned at "Annexure: Schedule" in presence of bidders representative if available. Only one
	representative will be allowed to participate in the tender opening. Bid received without EMD (if
	present) will be rejected straight way. The technical bid will be opened online first and it will be
	examined by a technical committee (as per specification and requirement). The financial offer/bid
	will be opened only for the offer/bid which technically meets all requirements as per the
	specification, and will be opened in the presence of the vendor's representatives subsequently for
	further evaluation. The bidders if interested may participate on the tender opening Date and Time.
	The bidder should produce authorization letter from their company to participate in the tender
6.	opening.  According to Point on of hids. The Committee reserves the right to reject any or all offers without
0.	<b>Acceptance/ Rejection of bids:</b> The Committee reserves the right to reject any or all offers without
7.	assigning any reason.  Pre-qualification criteria:
/.	(i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original
	equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.
	(ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a
	regular basis with technology/product updates and extend support for the warranty as well. (Ref.
	Annexure-II)
	(iii) OEM should be internationally reputed Branded Company.
	(iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the
	specifications, contradiction between bidder specification and supporting documents etc. may lead
	to rejection of the bid.
	(v) In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself
	can bid but both cannot bid simultaneously for the same item/product in the same tender.
	(vi) If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid
	on behalf of another Principal/OEM in the same tender for the same item/product.

**Performance Security**: The supplier shall require to submit the performance security in the form 8. of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is stated at page #2 of the tender document within 21 days from the date of receipt of the purchase order/LC and should be kept valid for a period of 60 days beyond the date of completion of warranty period. 9. Force Majeure: The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. 10. Risk Purchase Clause: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause. Packing Instructions: Each package will be marked on three sides with proper paint/indelible ink, 11. the following: i. Item Nomenclature ii. Order/Contract No. iii. Country of Origin of Goods iv. Supplier's Name and Address v. Consignee details vi. Packing list reference number 12. **Delivery and Documents:** Delivery of the goods should be made within a maximum of 08 to 16 weeks from the date of placement of purchase order and the opening of LC. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company: 4 Copies of the Supplier invoice showing contract number, goods' description, quantity 2. unit price, total amount; Insurance Certificate if applicable; Manufacturer's/Supplier's warranty certificate; Inspection Certificate issued by the nominated inspection agency, if any Supplier's factory inspection report; and Certificate of Origin (if possible by the beneficiary); 7. Two copies of the packing list identifying the contents of each package. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses. 13. **Delayed delivery:** If the delivery is not made within the due date for any reason, the Committee will have the right to impose penalty 1% per week and the maximum deduction is 10% of the contract value / price.

**Prices**: The price should be quoted in net per unit (after breakup) and must include all packing and 14. delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. In case of imports, the price should be quoted on FOB Basis only. Under special circumstances (eg. perishable chemicals), when the item is imported on CIF/CIP, please indicate CIF/CIP charges separately upto IIT Delhi indicating the mode of shipment. IIT Delhi will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges. Notices: For the purpose of all notices, the following shall be the address of the Purchaser and 15. Purchaser: Dr. Dipti Ranjan Sahoo, Department of Civil Engineering Indian Institute of Technology Hauz Khas, New Delhi - 110016. **Supplier:** (To be filled in by the supplier) (All suppliers should submit its supplies information as per Annexure-II). 16. Progress of Supply: Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under: 1. Quantity offered for inspection and date; 2. Quantity accepted/rejected by inspecting agency and date; 3. Quantity dispatched/delivered to consignees and date; 4. Quantity where incidental services have been satisfactorily completed with date; 5. Quantity where rectification/repair/replacement effected/completed on receipt of communication from consignee/Purchaser with date; 6. Date of completion of entire Contract including incidental services, if any; and 7. Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified). 17. **Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows: After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier's premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser's site at the time of submission of order acceptance. The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any

additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in

	respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful
	completion of the test specified.
	• In the event of the ordered item failing to pass the acceptance test, a period not exceeding one
	weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser
	reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.
	• Successful conduct and conclusion of the acceptance test for the installed goods and equipment
	shall also be the responsibility and at the cost of the Supplier.
18.	<b>Resolution of Disputes</b> : The dispute resolution mechanism to be applied pursuant shall be as follows:
	• In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to
	any matter arising out of or connected with this agreement, such disputes or difference shall be
	settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under
	and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings.
	The dispute shall be referred to the Director, Indian Institute of Technology (IIT) Delhi and if he is
	unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to
	act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding
on all parties to this order.	
	• In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by
	arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the
	supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United
	Nations Commission on International Trade Law) Arbitration Rules.
10	• The venue of the arbitration shall be the place from where the order is issued.
19.	Applicable Law: The place of jurisdiction would be New Delhi (Delhi) INDIA.
20.	Right to Use Defective Goods
	If after delivery, acceptance and installation and within the guarantee and warranty period, the
	operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue
	to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial
	or complete replacement is made without interfering with the Purchaser's operation.
21.	Supplier Integrity
	The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the
	Contract using state of the art methods and economic principles and exercising all means available to
	achieve the performance specified in the contract.
22.	Training
	The Supplier is required to provide training to the designated Purchaser's technical and end user
	personnel to enable them to effectively operate the total equipment.
23.	Installation & Demonstration
	The supplier is required to done the installation and demonstration of the equipment within one month
	of the arrival of materials at the IITD site of installation, otherwise the penalty clause will be the same
	as per the supply of materials.
	In case of any mishappening/damage to equipment and supplies during the carriage of supplies from
	the origin of equipment to the installation site, the supplier has to replace it with new
	equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance
	company as per his convenience. IITD will not be liable to any type of losses in any form.
24.	<b>Insurance:</b> For delivery of goods at the purchaser's premises, the insurance shall be obtained by the
	supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final
	destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a
	period of not less than 3 months after installation and commissioning. In case of orders placed on
	FOB/FCA basis, the purchaser shall arrange Insurance. If orders placed on CIF/CIP basis, the
	insurance should be up to IIT Delhi.
25.	insurance should be up to IIT Delhi. Incidental services: The incidental services also include:

• Arranging premises  26. <b>Warranty</b> : (i) Warrant at the I and/or of Supplied make supplied to the supplied make supplied to the supplied to t	g of 01 set of detailed operations & maintenance manual.  g the shifting/moving of the item to their location of final installation within IITD at the cost of Supplier through their Indian representatives.  ty period shall be (as stated at page #2 of this tender) from date of installation of Goods ITD site of installation. The Supplier shall, in addition, comply with the performance consumption guarantees specified under the contract. If for reasons attributable to the cr, these guarantees are not attained in whole or in part, the Supplier shall at its discretion arch changes, modifications, and/or additions to the Goods or any part thereof as may be try in order to attain the contractual guarantees specified in the Contract at its own cost pense and to carry out further performance tests. The warranty should be comprehensive
premises  26. Warranty:  (i) Warrant at the I and/or of Supplie make su	at the cost of Supplier through their Indian representatives.  ty period shall be (as stated at page #2 of this tender) from date of installation of Goods ITD site of installation. The Supplier shall, in addition, comply with the performance consumption guarantees specified under the contract. If for reasons attributable to the rr, these guarantees are not attained in whole or in part, the Supplier shall at its discretion ach changes, modifications, and/or additions to the Goods or any part thereof as may be rry in order to attain the contractual guarantees specified in the Contract at its own cost
26. Warranty:  (i) Warrant at the I and/or of Supplie make su	ty period shall be (as stated at page #2 of this tender) from date of installation of Goods ITD site of installation. The Supplier shall, in addition, comply with the performance consumption guarantees specified under the contract. If for reasons attributable to the cr, these guarantees are not attained in whole or in part, the Supplier shall at its discretion uch changes, modifications, and/or additions to the Goods or any part thereof as may be try in order to attain the contractual guarantees specified in the Contract at its own cost
(i) Warran at the I and/or o Supplie make su	ITD site of installation. The Supplier shall, in addition, comply with the performance consumption guarantees specified under the contract. If for reasons attributable to the cr, these guarantees are not attained in whole or in part, the Supplier shall at its discretion ach changes, modifications, and/or additions to the Goods or any part thereof as may be rry in order to attain the contractual guarantees specified in the Contract at its own cost
at the I and/or o Supplie make su	ITD site of installation. The Supplier shall, in addition, comply with the performance consumption guarantees specified under the contract. If for reasons attributable to the cr, these guarantees are not attained in whole or in part, the Supplier shall at its discretion ach changes, modifications, and/or additions to the Goods or any part thereof as may be rry in order to attain the contractual guarantees specified in the Contract at its own cost
	, and the second of the second
warrant to repai The Sup whatsoe correcti to reme may be which t (iii) The war differer compre installar workma (iv) After th	chaser shall promptly notify the Supplier in writing of any claims arising under this by. Upon receipt of such notice, the Supplier shall immediately within in 02 days arrange or or replace the defective goods or parts thereof free of cost at the ultimate destination. Supplier shall take over the replaced parts/goods at the time of their replacement. No claim ever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for on of defects in the warranty period is 02 days. If the supplier having been notified fails dy the defects within 02 days, the purchaser may proceed to take such remedial action as necessary, at the supplier's risk and expenses and without prejudice to any other rights, the purchaser may have against the supplier under the contract. The maintenance charges (AMC) under not schemes after the expiry of the warranty should also be mentioned. The chensive warranty will commence from the date of the satisfactory tion/commissioning of the equipment against the defect of any manufacturing, anship and poor quality of the components.  The every shall immediately within in 02 days arrange of the satisfactory tion/commissioning of the equipment against the defect of any manufacturing, anship and poor quality of the components.  The every shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within in 02 days arrange of the supplier shall immediately within 102 days arrange of the supplier shall immediately within 102 days arrange of the supplier shall immediately within 102 days arrange of the supplier shall immediately within 102 days arrange of
27. <b>Governing I</b>	t be included in computing the total cost of the equipment.
The contract govern its in	shall be written in English language. English language version of the Contract shall terpretation. All correspondence and other documents pertaining to the Contract, which ed by the parties, shall be written in the same language.
	Law t shall be interpreted in accordance with the laws of the Union of India and all disputes ect to place of jurisdiction.
29. Notices	
other party'	notice given by one party to the other pursuant to this contract/order shall be sent to the party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other s address. ice shall be effective when delivered or on the notice's effective date, whichever is later.
30. Taxes	The state of the s
Suppliers sh incurred until	all be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., il delivery of the contracted Goods to the Purchaser. However, VAT in respect of the etween the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.
31. <b>Duties</b> IIT Delhi is	exempted from paying custom duty under notification No.51/96 (partially or full) and custom Duty Exemption Certificate" can be issued after providing following information

	and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute,
	no certificate will be issued to third party:
	a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)
	b) Forwarder details i.e. Name, Contact No., etc.
	IIT Delhi is exempted from paying Excise Duty and necessary Excise Duty Exemption Certificate
	will be provided for which following information are required.
	b) Quotation with details of Basic Price, Rate, Tax & Amount on which ED is applicable
	c) Supply Order Copy
	d) Proforma-Invoice Copy.
32.	Agency Commission: Agency commission if any will be paid to the Indian agent in Rupees on
32.	receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in
	foreign currency under any circumstances. The details should be explicitly shown in Tender even
	in case of Nil commission. The tenderer should indicate the percentage of agency commission to be
	paid to the Indian agent.
33.	Payment:
	(i) For imported items Payment will be made through irrevocable Letter of Credit (LC). Letter of
	Credit (LC) will be established in favour of foreign Supplier after the submission of
	performance security. The letter of credit (LC) will be established on the exchange rates as
	applicable on the date of establishment. For Imports, LC will be opened for 100% FOB/CIF
	value. 80% of the LC amount shall be released on presentation of complete and clear shipping
	documents and 20% of the LC amount shall be released after the installation and demonstration
	of the equipment at the INST site of installation in faultless working condition for period of 60
	days from the date of the satisfactory installation and subject to the production of unconditional
	performance bank guarantee as specified in Clause 8 of tender terms and conditions.
	(ii) For Indigenous supplies, 100% payment shall be made by the Purchaser against delivery,
	inspection, successful installation, commissioning and acceptance of the equipment at IITD in
	good condition and to the entire satisfaction of the Purchaser and on production of unconditional
	performance bank guarantee as specified in Clause 9 of tender terms and conditions.
	(iii) Indian Agency commission (IAC), if any shall be paid after satisfactory installation &
	commissioning of the goods at the destination at the exchange rate prevailing on the date of
	negotiation of LC documents, subject to DGS&D registration for restricted items.
	(iv) All the bank charges within India will be borne by the Institute and outside India will be borne
	by the Supplier.
34.	User list: Brochure detailing technical specifications and performance, list of industrial and
	educational establishments where the items enquired have been supplied must be provided. (Ref.
25	Annexure-III)
35.	Manuals and Drawings
	(i) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply
	operation and maintenance manuals. These shall be in such details as will enable the Purchaser
	to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
	(ii) The Manuals shall be in the ruling language (English) in such form and numbers as stated in the
	contract.  (iii) Unless and otherwise agreed the goods equipment shall not be considered to be completed for
	(iii) Unless and otherwise agreed, the goods equipment shall not be considered to be completed for
36.	the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.  Application Specialist: The Tenderer should mention in the Techno Commercial bid the
30.	Application Specialist: The Tenderer should mention in the Techno-Commercial bid the
	availability and names of Application Specialist and Service Engineers in the nearest regional office. (Ref. to Annexure-III)
37.	Site Preparation: The supplier shall inform to the Institute about the site preparation, if any, needed
31.	for the installation of equipment, immediately after the receipt of the purchase order. The supplier
	1 for the installation of equipment, infinediately after the feeligh of the purchase order. The supplier

must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

## 38. Spare Parts

The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- ii. Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- iii. In the event of termination of production of the spare parts:
- iv. Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
- v. Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.

39. **Defective Equipment**: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider "Banning" the supplier.

#### 40. **Termination for Default**

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or
- ii If the Supplier fails to perform any other obligation(s) under the Contract.
- iii If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- For the purpose of this Clause:
  - i. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
  - ii. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;"
- In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar

	Goods or Services. However, the Supplier shall continue the performance of the Contract to the
	extent not terminated.
41.	<b>Downtime:</b> During the warranty period not more than 5% downtime will be permissible. For every
	day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed.
	Downtime will be counted from the date and time of the filing of complaint with in the business
	hours.
42.	<b>Training of Personnel:</b> The supplier shall be required to undertake to provide the technical training
	to the personnel involved in the use of the equipment at the Institute premises, immediately after
	completing the installation of the equipment for a minimum period of one week at the supplier's
	cost.
43.	<b>Disputes and Jurisdiction</b> : Any legal disputes arising out of any breach of contract pertaining to
	this tender shall be settled in the court of competent jurisdiction located within New Delhi.
44.	<b>Compliancy certificate</b> : This certificate must be provided indicating conformity to the technical
	specifications. (Annexure-I)
45.	Vendor should have supplied at least 3 nos. of similar equipment within India and abroad. A
	detailed reference of supply of equipment must be provided along with the bids. Any negative
	comments from any one referred would disqualify the bid. IIT Delhi reserves the right to
	interact/ visit with the referred customer as per its convenience.

## **COMPLIANCE SHEET**

TECHNICAL SPECIFICATION (Please provide your compliance against each bullet point mentioned below)

Sl. No.	Technical Specifications	Compliance Y/N
01	1. Servo-controlled Hydraulic Actuator (01 No.)	
	Single-ended, double-acting, fatigue-rated	
	Rated load capacity: Min. 900 kN (Tension); 1300 kN Compression); Rated stroke: ±250	) mm
	Full-stroke, coaxially-mounted Temposonic displacement transducer	
	Manifold have provision to accommodate dual Servo-valves with /without port shut-offs	
	One servo-valve of 63 lpm (minimum) capacity	
	One Axial Load Cell: ±1000kN capacity; overload of 150%; Non-linearity: 0.15% of full-states.	scale
	One Swivel Head and One Swivel Base (Force: ±1,000 kN; Tilt angle: ±8°; Swivel angle:	: <b>+</b> 90°/-30°)
	Both displacement transducer and Load Cell are factory calibrated to full range	
	Compatible with the existing MTS TestStar-IIm controller.	
	2. Hydraulic Power Unit (01 No.)	
	Variable-volume pump, Rated flow capacity: 100 lpm or higher, Chasis for 300 lpm	
	210 bar pressure, and 415 V AC, 50 Hz, 3-phase power	
	Direct-coupled 60-HP submerged motor providing 91% operating efficiency.	
	Nominal noise rating of 68dB(A) or less at 3 feet with the pump operating at high pressure.	re
	Corrosion-resistant stainless steel oil-to-water heat exchanger	
	Submersed pump/motor design to eliminate the release of ambient heat.	
	Full flow 3-micron absolute filter in the return line to provide excellent oil cleaning.	
	Integrated reservoir, pump/motor, heat exchanger	
	Approved electrical disconnect interrupts power to the unit when the door is opened.	
	Interlock circuitry for over-temperature and low-fluid level protection.	
	HPU up-gradable to 300 lpm in future without multiple HPU commoning	
	• Foot print (overall size) = less than 3 m x 1.5m.	
	Hose pipes for actuator: Pressure, Return and Drain piped of 15 m long each	
	3. Digital Controller (01 No.)	
	Digital servo-control, function generation, data acquisition, hydraulic control, and digital I.	1/0
	Expandable to 8 nos. of control channels and to 4 nos. of Test Stations.	
	Direct Digital Control (DDC) bandwidth update rate: 6 kHz or faster	
	Signal conditioner data sample rate: 100 kHz or faster.	
	Computer controlled transducer limits.	
	Automated dynamic control mode switching between any connected transducer	
	Computer-selectable channels of 16 bit resolution analog output	
	Ability to save and restore PID tuning settings	
	Adaptive controls compensation: Peak-Valley and Null Pacing	

Cables for hydraulic control, servovalves, conditioners, and communications to personal computer.	
Connected with high-speed serial interface with personal computer, No parallel interface	
Online UPS should be included and should communicate with the controller.	
System cables, 15 meter length, 15 meter HPU cable	
One A/D CARD: 8 channel analogue input per controller for data acquisition & feedback control	
One D/A CARD: 8 channel analogue output per controller	
Digital Universal Conditioner, Valve Driver/Digital Universal Conditioner card	
System operating software	
4. Application software	
Static Deflection Testing Software	
Pseudo-dynamic Testing Software with the inbuilt specified algorithm	
Seismic Profile Generation Software ability to generate sine sweep, random wave forms as well as earthquake records	
5. General points:	
Provided similar equipment to five organizations in India and abroad	
The controller compatible for advanced simulation software like Pseudo-dynamic and quasi-static hybrid simulation software	
Supplier is ISO 9000 series certificated	

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

	Signature of Bidder
Name:	
<b>Designation:</b>	
Organization Name:	
Contact No.:	

## << Organization Letter Head >> DECLARATION SHEET

gone through the specification, conditions and sti intent of specification. This is certified that our organization has been au further certified that our organization meets all the Moreover, OEM has agreed to support on regular warranty.	hereby certify that all the information and data furnished by fication are true and complete to the best of our knowledge. I have pulations in details and agree to comply with the requirements and thorized (Copy attached) by the OEM to participate in Tender. We conditions of eligibility criteria laid down in this tender document. basis with technology / product updates and extend support for the ized due to academic discount given to IIT Delhi.
We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.  1 Phone	NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	
6 TIN Number	
7 PAN Number	
(In case of on-line payment of Tender Fees)	
8 UTR No. (For Tender Fee)	
(In case of on-line payment of EMD)	
9 UTR No. (For EMD)	
10 Kindly provide bank details of the bidder in the following format:	
a) Name of the Bank	
b) Account Number	
c) Kindly attach scanned copy of one Cheque book page to enable us to return	

(Signature of the Tenderer)

Name:

**Seal of the Company** 

## **Annexure-III**

## List of Govt. Organization/Deptt.

rears (must be supported with work or			
lame of the organization	Name of Contact Person	Contact No.	
ame of application specialist / Servic	e Engineer who have the technical compet	tency to handle a	
ame of the organization	Name of Contact Person	Contact No.	
	I	I	
		CI A ADII	
		Signature of Bide	
	Name:	_	
	Name:  Designation:  Organization Name:		

## **Bid Submission**

## **Online Bid Submission:**

The Online bids (complete in all respect) must be uploaded online in Two Envelops as explained below:-

Sl. No.	Sl. No. Documents Content								
1.	Technical Bid	Compliance Sheet as per Annexure - I	.PDF						
2.		Organization Declaration Sheet as per Annexure - II	.PDF						
3.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III)	.PDF						
4.		Technical supporting documents in support of all claims made at Annexure-I (Annexure-IV)	.PDF						
	Envelope – 2								
Sl. No.	TYPES	Content							
1.	Financial Bid	Price bid should be submitted in PDF format.	.PDF						

## Department of Civil Engineering Indian Institute of Technology Delhi Hauz Khas, New Delhi-110016

Date: 22/09/2016

# Subject: Purchase of Servo-controlled Hydraulic Test System (Following format is used for imported items)

	S. No.	Currency	Description of Item &	Qty. in	Unit	Agency	Discount	Ex-works	Packing +	FOB	Insurance	CIF Price
			Specification	Units	Price	Commission		price	Handling	Price	+ Frieght	(f+g)
								(d=a+b-c)	+ DOC +	(f=d+e)	(g)	
					(a)	(b)	(c)		Inland			
									Frieght			
									(e)			
Ī	1											
				0.1								
				01								

For indigenous items please quote as per following format.

S. No.	Description of Item & Specification	Qty. in Units	Unit Price in Rs.	Excise Duty %	CST/VAT%	Octroi%	Total Price in Rs.
1		01					

**Note**: The above financial template should be strictly followed. Any deviation from the above template (in terms of description and specification of the item) may lead to cancellation of the tender.